



GARY R. HERBERT  
Governor

GREG BELL  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Water Rights

KENT L. JONES  
State Engineer/Division Director

July 28, 2011

Merlin Esplin  
Orderville Irrigation  
PO BOX 48  
ORDERVILLE, UT 84758

SEAA 1321

Dear Merlin:

On July 12, 2011, I conducted a calibration inspection of most of the Diversions on East Fork of the Virgin Distribution System. I was accompanied by the new Water Commissioner, Jeff Medlin. For the Orderville diversion, this was a follow up to the October 7, 2008 inspection conducted with the previous commissioner, Gerry Hoyt. A second inspection around that time was done on July 21, 2009. A number items still require attention:

During the recent inspection, I noted that there was some recent rock reinforcement done in response to last December 2010 flood and this year's high water, however the diversion dam itself still remains to be cleaned of silt to allow the entire intake to work. This involves maintenance to remove silt and vegetative growth at the diversion dam. I am also concerned with the buildup of logs above and below the dam. These should also be removed to prevent future problems. At the sluice structure, the sharp crested weir needs to be cleaned on a weekly basis to prevent build up, this requires aggressive scraping with a flat blade shovel. The boom has been effective in mitigating the waves on the staff gauge; however buildup on the boom should be cleaned yearly (or replaced). It may be more beneficial to install a larger diameter PVC boom instead, along with a second boom. These actions will provide more accurate water readings. The grating over the Pipe entrance should be cleaned or replaced; excessive buildup prevents the pipe from receiving all the water measured. The sluice structure should be regularly drained, inspected and cleaned to provide effective silt removal.

Most notable was measurement calibration: we checked the width of the weir crest and measured 11.3 feet wide, with slanted sides, this make it a "Cipoletti" style weir. If you have a calibration table for a 11.3 wide Cipoletti weir, we can use that, otherwise, I have developed a calibration table for an 11.3' Cipoletti weir (attached). To insure accurate readings, the staff gauge should be checked for level when the sluice basin is drained. The Staff gauge should be checked to insure its mounted level with the crest of the weir, and it should be checked for level side to side. The staff gauge must be kept clean.

You should contact Jeff Medlin, the Water Commissioner [(435) 648-2899 or (937) 369-8612)] for his assistance. Otherwise if you have questions, I can be reached at (801) 538-7430 or at [MikeSilva@utah.gov](mailto:MikeSilva@utah.gov).

Sincerely,

Mike Silva  
Distribution Engineer



SCANNED

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**Flow over Standard  
 contracted Cipoletti weir**

11.3 foot wide Cipolletti Weir  
 $Q=3.367(Lh^{1.5})$

11.3 foot wide Cipolletti Weir

Height over Weir	Flow
Height in Feet	CFS
0.20	3.37
0.25	4.71
0.30	6.20
0.35	7.81
0.40	9.54
0.45	11.38
0.50	13.33
0.55	15.38
0.60	17.52
0.65	19.76
0.70	22.08
0.75	24.49
0.80	26.98
0.85	29.55
0.90	32.19
0.95	34.91
1.00	37.70
1.10	43.50
1.20	49.56
1.30	55.89
1.40	62.46
1.50	69.27
1.60	76.31
1.70	83.57
1.80	91.06
1.90	98.75
2.00	106.65

